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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,942

05/22/2006

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7590

07/17/2008

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EXAMINER

MCCLELLAND, KIMBERLY KEIL

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,942	<b>Applicant(s)</b> KIKUCHI ET AL.	
	<b>Examiner</b> KIMBERLY K. MCCLELLAND	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/22/06, 11/22/06</u> .                                      | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. With respect to claim 1, the term "heat-resistant adhesive film" is unclear. The term "heat resistant" in claim 1 is a relative term which renders the claim indefinite. The term "heat-resistant" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear what temperatures must be withstood in order to be temperature resistant. Furthermore, the specification recites thermoplastic polyimide as an example of a heat resistant material. However, thermoplastics melt at relatively low temperature, and generally are not considered heat resistant. Claims 2-8 are rejected due to their dependency on independent claim 1.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication No. 2002-361744 to Hase et al. (machine translation provided) in view of U.S. Patent No. 5,677,024 to Abe et al.

6. With respect to claim 1, Hase et al. discloses a method of manufacturing a laminated sheet, including a heat-resistant adhesive film (1) having a metal foil (1) bonded to at least one side thereof, the method comprising: a step of performing thermal lamination of the heat-resistant adhesive film and the metal foil by passing them with protective films (5) through between a pair of metal rolls (4); and a step of separating the protective films (See Figures 12-14). However, Hase et al. does not specifically disclose the molecular orientation ratio of the protective film is in a range of 1.0 to 1.7, and the deviation of the molecular orientation ratio in each of the machine direction and the transverse direction of the protective film is 0.1 or less.

7. Abe et al. discloses a laminating method, including a protective release film with the molecular orientation ratio of the protective film in a range of 1.0 to 1.7, and the deviation of the molecular orientation ratio in each of the machine direction and the transverse direction of the protective film is 0.1 or less (column 3, lines 22-26 and lines 42-60; See Table 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the molecular orientation values of the protective film taught by Abe et al. with the protective film of Hase et al. The motivation would have been to allow for visual inspection of the laminate for foreign matter (column 2, lines 42-55).

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8. As to claim 2, Hase et al. discloses a laminate including polyimide protective film and copper metal foil (See paragraph 0023). Hase et al. does not specifically disclose the linear expansion coefficient  $\alpha$  of the protective film at 200°C to 300°C is in a range of  $(\alpha_0 - 10)$  ppm/°C to  $(\alpha_0 + 10)$  ppm/°C, wherein  $\alpha_0$  is the linear expansion coefficient of the metal foil at 200°C to 300°C. However, the properties of linear expansion coefficients are known in the art to be material dependent properties. Therefore, the method of Hase et al. employing the same materials in the same way as applicant's current invention would inherently result in the same linear expansion coefficients.

9. As to claim 3, Hase et al. discloses a laminate including thermoplastic polyimide adhesive, polyimide protective film, and copper metal foil (See paragraph 0023). Hase et al. does not specifically disclose the tensile elastic modulus of the protective film at 25°C is in a range of 2 GPa to 10 GPa. However, the tensile elastic modulus of a material is known in the art to be a material dependent property. Therefore, the method of Hase et al. employing the same materials in the same way as applicant's current invention would inherently result in the same tensile elastic modulus.

10. As to claims 4 and 6, Hase et al. discloses the thickness of the protective film is 75  $\mu\text{m}$  or more (See paragraph 0020).

11. As to claims 5 and 7-8, Hase et al. discloses the protective film is a non-thermoplastic polyimide film (See paragraph 0023).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY K. MCCLELLAND whose telephone number is (571)272-2372. The examiner can normally be reached on 8:00 a.m.-5 p.m. Mon-Thr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on (571)272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kimberly K McClelland/  
Examiner, Art Unit 1791

KKM

/Philip C Tucker/  
Supervisory Patent Examiner, Art Unit 1791